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THE CENTRAL

Rio Grande Valley

OF

NEW MEXICO

An Irrigated District of Unsurpassed Fertility
Offering Exceptional Opportunities to
the Farmer, Truck Gardener, Fruit
Grower and Investor

With a Brief Sketch of Development, Conditions, Climate and
Vast Natural Resources of the Counties of

Bernalillo, Sandoval, Valencia

By H. B. HENING

By Authority of the Bureau of Immigration
of New Mexico
1908

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A Magnificent Empire of 10,000 Square Miles, Rich
Beyond Estimate in Natural Resources

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Within These Three Counties Are Found:

The Central Rio Grande Valley, destined to become one of the foremost irrigated farming, fruit growing and trucking districts in the world; with thousands of acres of land subject to irrigation.

The City of Albuquerque, the chief consuming and distributing market of the southwest, where every pound of fruit, grain and produce may be readily disposed of.

Hundreds of thousands of acres of public land subject to homestead and desert entry.

A grazing area supporting hundreds of thousands of livestock.

Mining districts giving promise of untold wealth and offering alluring inducement to prospector and investor.

The finest and most healthful climate under the sky; adequate sanitaria, pleasant health resorts, hot and mineral springs of recognized therapeutic value.

Occupation, Opportunity and Homes for all who come.

For further information about the Central Rio Grande Valley or any section of New Mexico, address the Secretary of the Bureau of Immigration, Albuquerque, New Mexico.

Looking Across the Rio Grande Valley at Albuquerque

A Typical Alfalfa Field Near Albuquerque

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Introduction

DURING THE PAST TWO YEARS New Mexico has enjoyed a period of unprecedented development. Population has increased more than 100,000 and with it has come an enormous and constantly growing demand for land, irrigated and non-irrigated; and for information about the land. National irrigation projects in New Mexico have drawn world-wide attention to the marvelous fertility of the irrigated districts and an accompanying demand for information about these districts, of which the Central Rio Grande Valley, within the three counties of Bernalillo, Sandoval and Valencia, is one. Development in this central valley has kept pace with the rest of New Mexico. Demand for land is great; demand for information is greater. The purpose of this book is to furnish accurate, carefully verified, conservatively stated information about this valley, so that the man who is looking here for farm, orchard, occupation, home or health, may, after reading this book, know conditions as he will find them. Included is a necessarily brief outline of development, conditions and the vast natural resources of the magnificent empire of 10,000 square miles, outside the immediate valley of the Rio Grande, yet within the boundaries of the three counties.

In preparing this information the writer has to acknowledge gratefully, assistance from many of the successful farmers of the valley and from citizens in each of the three counties whose number is too great for individual reference.

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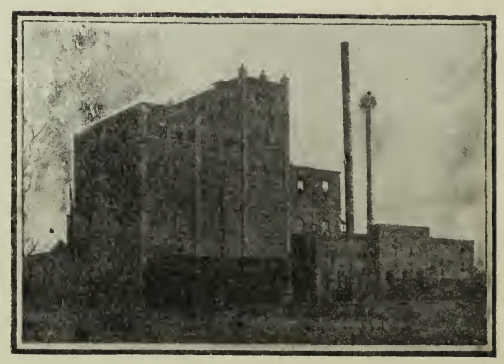
Sheep Scene in Bernalillo County

A Wool Train Coming into Albuquerque

Albuquerque Foundry



Southwestern Brewery at Albuquerque

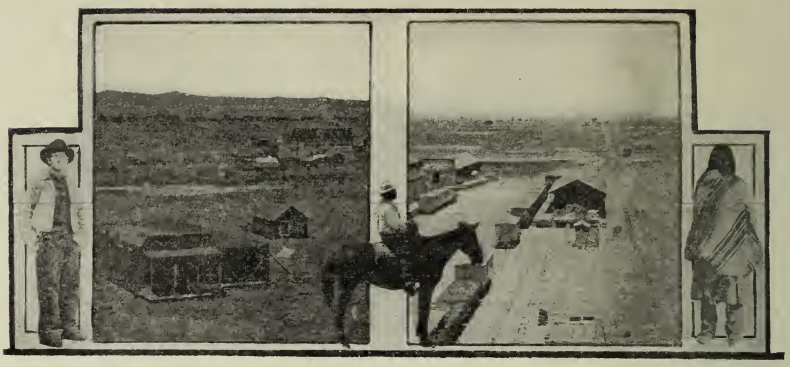
The Central Rio Grande Valley

Location, Area and Development

THE RIO GRANDE, upon entering New Mexico from Colorado flows for many miles through a series of deep canyons, with high, precipitous walls allowing no opportunity for the diversion of its waters for irrigation purposes. Near the town of Espanola, north of Santa Fe, the valley widens for a short distance to form the Espanola valley. Thereafter it enters White Rock Canyon to emerge in eastern Sandoval county into a broad level valley, varying in width from one to six miles and continuing thus across the southeastern corner of Sandoval county, through the center of Bernalillo county and across the eastern section of Valencia county. This district, from White Rock Canyon to a point considerably below the southern boundary of Valencia county is known as the Central Rio Grande Valley. one of the most fertile irrigated districts in the world and destined to become one of the world's most productive areas.

The Rio Grande has been called the Nile of America, and the region along its course in Central New Mexico bears a striking resemblance in scenery, topography and to a certain extent, in conditions to the valley of the Nile. Many interesting volumes could be written of the topography, the geology, the climate and the magnificent scenery of this region. They are worthy of all the attention that can be given. From the high mesas or table lands which shield the valley on either side like protecting walls, may be seen with the naked eye the towering peaks of whole groups of mighty mountain ranges, ten, thirty, fifty and even eighty miles away; while but a little distance to the east, shadowing the valley for four-fifths of its length, rise the picturesque Sandia and Manzano ranges, rugged and colorful, presenting an ever changing panorama of lights and shadows as the few fleecy clouds of the land of sunshine float

The Rio Grande at Barelas Bridge—Albuquerque



Albuquerque in 1881

above them. In winter these mountains are snow capped, but they protect the valley below from the driving cold of the east winds, while in summer a constant, cooling breeze comes from their slopes rendering more pleasant a temperature never sufficiently warm to cause discomfort. The eastern slopes of the Sandia range expose the mighty record of half a dozen geologic ages, lending light to the story of the formation of the fertile valley, a valley with a soil so deep that drills punching holes a hundred, five hundred and a thousand feet deep have thus far failed to find a rock to mark its bottom.

The location and area of the Central Rio Grande Valley and of the region immediately adjacent may be readily traced upon the maps accompanying.

LAND SUBJECT TO IRRIGATION

Within the Central Rio Grande Valley, from White Rock Canyon to the southern boundary of Valencia county is a total area subject to irrigation from the Rio Grande of 120,000 acres. Of this area, forming one of the largest irrigated districts in the world, probably 100,000 acres are now under ditch (irrigation canals now in use), while of the area under ditch but about 6,000 acres are in actual cultivation. Approximately a fifty per cent increase in the area under actual cultivation will occur within the next twelve months, through extensions of the present irrigation system and construction of new canals.

Approximately 20,000 acres within the Central Valley are included in the boundaries of Pueblo Indian land grants, under control of the United States for the Indians and not subject to sale or lease. This area alone is greater than the entire Riverside district of California, and while not now available for the farmer a portion of it must eventually be thrown open for development, the Indians finding a very small portion of the vast tract of fertile land held for them sufficient for their energies and needs. Eventually the major portion of this land will become available for American farmers, but in the meantime here is a vast area now ready to be turned into profitable farm and orchard lands, offering unusual

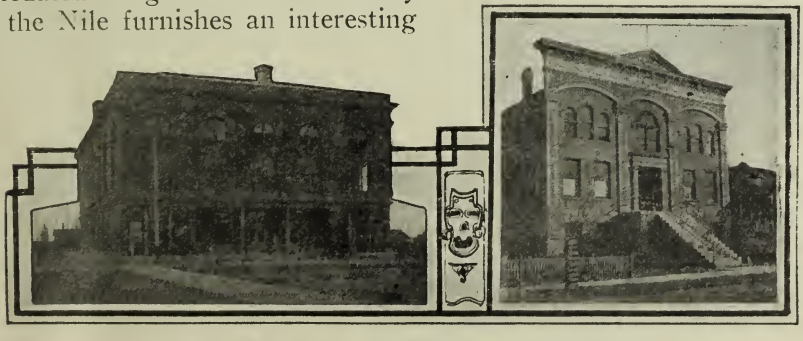
opportunities for development and investment and with a dependable water supply from the Rio Grande sufficient to irrigate every acre in the valley which can be reached by gravity canals.

When it is considered that the entire area of the lands described is immediately adjacent to the city of Albuquerque, the largest consuming and distributing market between Denver and Los Angeles and when the known and proven productivity of the soil and the certainty of the yield are recalled, the prices now being obtained for these lands are marvellously low, ranging as they do from $25 to $100 per acre for land not under ditch and from $75 to $350 an acre for land under irrigation, depending, of course, upon location as to market, improvements, and the usual conditions governing the price of similarly located lands. Of the ready market of the Central Rio Grande Valley more will be said. It is sufficient now to say that country road building is epidemic through the region. Good bridges span the Rio Grande at frequent intervals giving ready access to the lands west of the river, while the county of Bernalillo is about to expend $100,000 in the construction of two additional bridges. Recent extensions of the railroads reaching Albuquerque give an immediate outlet for freight and express east, west, north and south, with an eager demand for Central Rio Grande Valley products in all directions.

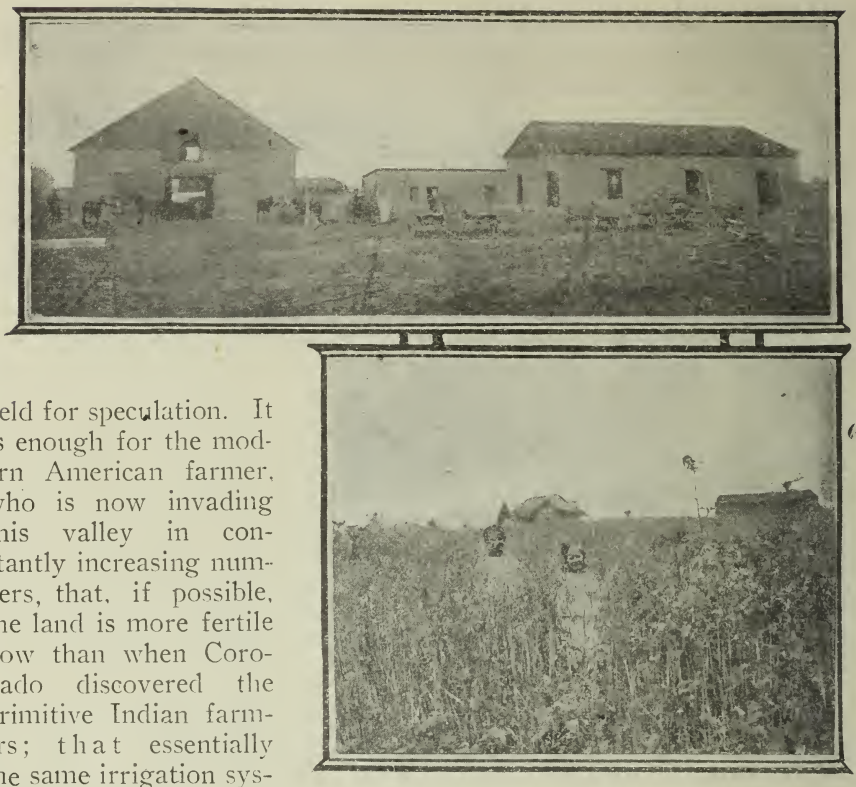
PRICES OF LAND

A considerable portion of the area now under cultivation in the Central Rio Grande Valley was being successfully tilled before the Fathers landed on Plymouth Rock. Every record stands to prove that it had been cultivated for ages prior to that date, for when the first daring Spanish Conquestadores pushed their treasure seeking way north into what is now New Mexico they found the Pueblo, or village Indians growing their scanty crops by irrigation, leading the water from the Rio Grande through crude canals. Thus the Rio Grande Valley seems fully justified in claiming title as the Cradle of Irrigation in America. The claim of many scientists that irrigation in this valley antedated irrigation in the Valley of the Nile furnishes an interesting

THE IRRIGATION SYSTEM



Elks' Theater Colombo Theater, Albuquerque



A Typical Central Valley Alfalfa Farm

field for speculation. It is enough for the modern American farmer, who is now invading this valley in constantly increasing numbers, that, if possible, the land is more fertile now than when Coronado discovered the primitive Indian farmers; that essentially the same irrigation system in use then is in use now, although enlarged and extended, and that the opportunities for profitable development are therefore great.

Irrigation in the Central Valley is by the community ditch system by which farmers owning adjoining lands associate themselves together for the construction of an irrigation canal for their common use. Shares of water are divided in proportion to the amount of land held by each for irrigation and the land owner contributes his porportion in labor or money toward the maintenance of the canal, its cleaning, repairing and the incidental expenses attached. The water right thus acquired goes with the land and is perpetual as any other improvement. Water rights, of course, may be divided, transferred or sold separately from the land, or attached to other lands by deed or transfer. The actual cost per acre for maintenance and use of water on these community ditches varies between communities and also according to whether the land owner desires to contribute his proportion in money, or in labor on the ditch. The charge, in any event, is extremely low as compared to irrigation charges in most of the more modern irrigated districts, varying from 75 cents to $3.00 per acre per year.

There are many of these community ditches along the Rio Grande

Albuquerque Commercial Club

each one being governed by a board of acequia or ditch commissioners, consisting of three members and a Mayor Domo, or canal superintendent, the four being elected annually by the members of the comunity, at the ditch, or acequia election. These elections are always friendly and the canal superintendent is always nominated with a view to his ability to make his canal give best service. There is much room for improvement in the present system, in straightening canals and stopping waste of water, but the community ditch never fails to get the water to the land and it is doubtful if the modern system has yet been found which can get the water to the land more cheaply. In any irrigated district, however, economy in the use of water is essential to expansion and the irrigation system in this valley must be and is even now being improved and modernized. This will come quickly with the rapidly increasing population of American farmers who, not content with the slipshod methods inherited from the Indians, are seeking to bring every acre to the fullest degree of productivity. Already one large irrigation canal on modern lines is completed near Los Lunas, which will add 5,000 acres to the irrigated area, while other important systems are proposed for immediate construction.

Eventually the National Reclamation Service will make use of the ideal storage reservoir site offered by the high walls of White Rock Canyon at the head of the valley. Surveys have been made and stream measurements are now being recorded with a view to the future construction of the project, which, when it comes, will replace all of the old comunity canals and irrigate every acre of land within the valley. Meanwhile the old system serves its purpose well, delivers to the lands under

ditch an abundant and dependable water supply and at a cost that is infinitesmal when the abundance and value of the crops produced are considered. Without a single extension of the present canals the Central Rio Grande Valley can and will be brought to the highest state of cultivation. Modern methods and improvements are merely serving to increase efficiency and extend the area.

WATER SUPPLY

The Rio Grande is essentially a torrential, or flood water stream. From the mouth of White Rock Canyon south through New Mexico it possesses all the characteristics of a typical desert stream, having its flood time and its period of low water. Fortunately, however, there is always an abundant supply of water for irrigation during the growing season. The vast snow drifts which pile up in the Rio Grande's enormous watershed during the winter, melt gradually during the spring and early summer, maintaining a large volume of water until practically all crops are matured. Recent expenditure of large sums in dyke construction has averted all danger of floods which in past years have done some damage to lands immediately adjacent to the river during the spring freshets.

Another source of water supply in this valley, which will eventually become an important adjunct to the gravity irrigation canals, is by means of pumping from the underflow. A very large portion of the flow of the Rio Grande passes through the loose sand strata beneath its bed. Water is encountered at from seven to ten feet throughout practically the whole of the valley and while at times the water in the river may be very low there has never been any noticeable diminution of the volume of this underflow, which is encountered in the successive water strata at depths from seven to one thousand fleet, the latter being the greatest depth to which drilling has been done. A number of pumping plants are now in operation, the water being raised by windmills or small gasoline pumps, inexpensive of operation. The water is stored in small reservoirs, also easy and inexpensive of construction. By this means a very large area upon higher levels, not to be reached by gravity canals will eventually be brought under cultivation. The extensive market gardens of Herman Bleuher, one of the most successful truck farms near Albuquerque, is irrigated from a reservoir thus supplied.

Stock Yards at Albuquerque

What the Land Will Produce

The Large and Certain Profits from Intensive Cultivation

THERE IS NO CLAIM of the miraculous made for the Central Rio Grande Valley. Here as elsewhere the best results are to be obtained only by hard work, intelligently applied. It is claimed for this valley, however, that with industry and intelligence, the soil will give returns as great, if not greater than in any other irrigated district in the world. It is now fully recognized that the most productive land in the world is irrigated land. Irrigation gives the enormous advantage of absolute certainty of the crop when properly planted and cared for. The farmer in an irrigated district is wholly independent of conditions of flood, rainfall or drouth which play so large and so uncertain a part in the calculations of the farmer in the rain belt. If the rain falls on an irrigated farm, so much the better. If it does not fall there is always the irigation canal, much better than the rainfall, because the exact quantity of water needed to mature any given crop, may be applied at will.

The irrigated farm requires more careful attention than non-irrigated land. Care and time and intelligence are required in planting and in applying the water, and as a result the farmer in an irrigated district usually confines his energies to a small tract, depending for his revenue upon intensive cultivation, larger yield, and the certainty of the crop. An irrigated farm of ten acres in this valley under intensive cultivation and with carefully selected crops will produce a revenue greater than can possibly be obtained from 160 acres planted to grain or other field crops in the rain belt. Planted to orchard, or producing melons or truck, ten acres of this land may be made to produce a substantial income and in the end a moderate fortune. Farms in this valley usually range from ten to forty acres; seldom more than forty. A few large planters of alfalfa, onions. melons, ect., cultivate larger tracts, a very few using more than 200 acres. This, however, is irrigated farming on a large scale and requires the outlay of considerable capital. The farmer cultivating a small tract makes his profit in proportion to his acres and his industry and the men who are getting the largest annual returns from valley farms are those giving their attention to twenty acres or less.

A Typical Central Valley Truck Garden

Mann Brothers Market Gardens, Albuquerque, Plant of the American Lumber Company in Distance

The better equipped market gardens at Albuquerque have incomes of from $8,000 to $15,000 a year, while two small farms of seven acres each, both established less than three years ago, within five miles of Albuquerque, are now producing $2,000 net each, per year. The visitor to this valley may, within a drive of three miles through the valley from Albuquerque be shown farms of from 2½ to 10 acres, each producing a comfortable income.

The climate of the Rio Grande Valley is ideal for the successful growing of all field and truck crops. The spring is early and subject to few severe changes of temperature, while the growing and maturing of crops is in no danger from killing frosts until November.

CLIMATE AND SOIL

The soil of the valley is rich and so deep as to be practically inexhaustable, while it is being renewed and fertilized constantly by the deposits of silt carried in suspension in the irrigation water. Its composition is from adobe (soil which is very sticky when wet and which bakes very hard when dry) to loam, clay loam and sandy loam. Its adaptibility to practically all crops grown in the temperate zone has been demonstrated. There are, however, a few exceptions and the farmer who is beginning in this valley should bear in mind that much depends upon the care and judgment used in selecting his crops. A few crops, which while doing well in other sections are total failures here, while crops which fail utterly elsewhere are among the most valuable crops here. Irish potatoes do not do well in this valley and it is only occasionally that a fair crop can be produced. Sweet potatoes, on

the other hand, produce in abundance and quality quite unsurpassed. The soil is generally easy to cultivate after the farmer has become accustomed to the needs of irrigated land.

The principal field crop in the Central Rio Grande Valley at present is alfalfa; and it is likely to continue so because it is the easiest crop to grow and care for, while the profits are large and sure. The mere amateur at farming may make a success of alfalfa growing. Once planted and a stand secured the alfalfa field does not have to be resown. Its roots drive deep until they reach moisture level below and from that time the plant derives the chief portion of its water supply from below. Comparatively little irrigation is necessary although the water must be applied frequently as each crop, or cutting comes on. There are alfalfa fields within a few minutes walk of Albuquerque and all through this valley, planted a quarter of a century ago, which have never been reseeded and which are producing more abundantly now than during the first five years. Properly cared for the plant is practically perpetual.

BIG PROFITS FROM ALFALFA

A Typical Irrigation Ditch

Bleuher Market Gardens, Albuquerque

In this valley alfalfa produces always four cuttings, often five, and in rare instances or specially cared for fields, six cuttings in a season. Each cutting from a fair stand produces three-fourths of a ton to two tons per acre, or as a comparative estimate, six tons per season, per acre.

Alfalfa costs from $2.50 to $5.00 per acre per season to grow and harvest, including all expenses for water, cutting, etc., with an added charge of from $1.00 to $1.50 per ton for baling. Obviously the large grower, with his own baling machinery and better equipment, can load his alfalfa on the cars cheaper than the man whose crop is limited to an acre or so. But the profit of the small grower is satisfyingly large.

ALFALFA SELLS AT CUTTING AT FROM $10 to $12.50 per ton. STORED UNTIL THE WINTER SEASON IT SELLS READILY AT $14 to $16 per ton. THE AVERAGE ALL YEAR PRICE IN THIS VALLEY IS $13.50 per ton.

A NET PROFIT OF $60 per acre per season from alfalfa is not unusual, while a net profit of $40 per acre, if properly cared for, is sure.

Wheat is one of the principal field crops and the area planted is being rapidly extended. The market is ready and top prices are always paid. Flour mills are located at Bernalillo, in Sandoval county, two at Albuquerque, and at Belen, Los Lunas and Peralta in Valencia county. Wheat is well adapted to the soil, easy to grow and giving a good yield, thirty-five bushels to the acre being a fair average. Corn, requiring more care through a longer season, has not thus far been given much attention. Oats, barley and rye do exceptionally well, giving large yields and bringing high prices. There will be a great extension of the area given these crops when the productivity becomes more generally known.

WHEAT, CORN, OATS, ETC.

The soil and climate of this valley are ideal for the culture of a sugar beet giving a high percentage of saccharine matter. Careful analyses prove that the beets grown in this valley give from 18 to 20 per cent saccharine matter, or from two to four per cent better than the best beet grown in the Arkansas valley region of Colorado. The first extensive experiment in sugar beet culture in this valley is being made this season with fifty-two farmers associated in the cultivation of 76 acres in the vicinity of Albuquerque. The average yield here is twenty tons to the acre and the average price on the cars $4 per ton, or $80 per acre gross. The cost of producing varies from $18 to $25 per acre, giving an average net profit of $60 per acre. The entire season's crop has been contracted for by sugar manufacturers of Holly, Colorado, who agree, in the event of the success of the crop, to establish a sugar factory at Albuquerque to care for the beet crop of the Central Valley.

SUGAR BEETS

Onions flourish as a field crop in this valley and are receiving attention from large planters who are finding them money makers. The Spanish onion, having an exceptionally fine flavor and attaining good size, is the favorite crop, although the Bermudas and fancy grades also do well. Onions will yield, with careful cutlivation, an average of 30,000 pounds to the acre, and comparatively little cultivation is needed after the crop is well started. The 1907 onion crop in this valley sold at an average of $2.50 per 100 pounds. The 1908

ONIONS

Fifty Dollars Worth of Garden Truck—the Regular Morning Crop of the Bleuher Gardens

In Bear Canyon, Sandia Mountains, East of Albuquerque

crop will bring about the same price, growers finding a net profit of from $500 to $750 per acre.

If the profits from Alfalfa, onions, beets and other field crops are large, they are completely overshadowed by the earnings from truck gardening. Several of the largest incomes in New Mexico today are enjoyed by men who own truck gardens in the vicinity of Albuquerque. The ready market, so absolutely essential in trucking, is found in Albuquerque and in the constantly growing demands of the cities and towns along the Santa Fe railroad north, south, east and west. There is a ready market, at high prices, for every pound of truck that can be grown in this valley.

TRUCK GARDENING

Melons are grown extensively by a few gardners for the local and immediate southwestern market. Cantaloupes will not become a large shipping crop immediately owing to the competition of the established Rocky Ford district where the crop ripens at about the same time. The local demand, however, is enormous and the acreage could be doubled many times without crowding the market, while the flavor of the melon grown here is quite the equal of the Rocky Ford or Brawley product.

The same conditions are true of watermelons, which produce abundantly and in exceptional quality.

Celery is one of the prize truck crops. The plant produced here by the Blueher and the Mann Brothers gardens is acknowledged to be superior to the best Michigan product and celery from these gardens is supplied to the Harvey eating house system from Chicago to San Francisco upon yearly contract while it is eagerly sought by the markets of Denver and Los Angeles.

Tomatoes, cabbages, cauliflower, beans, carrots, parsnips, turnips, all produce abundantly and find ready markets while the small table vegeta-

bles are produced all year round, one especially equipped truck gardener selling an average of thirty dozen bunches each of lettuce, onions and radishes per day, every day in the year.

Asparagus is one of the special crops which produce large profits. It has been demonstrated that asparagus can be made to produce $1,000 per acre net, in this valley.

Aside from a few large and very profitable orchards fruit growing has not been developed to any considerable extent in this valley. There are large orchards near Bernalillo, Albuquerque, Los Lunas and Belen the profits from which have demonstrated the tremendous commercial possibilities of the fruit growing industry. These profits have attracted notice and the industry is now receiving a great deal of attention. The next few years will bring many young orchards into bearing and within five years fruit growing on a large scale will have been fully established. The opportunities for large returns are very attractive.

APPLES, PEACHES, PEARS, GRAPES, ETC.

As elsewhere in New Mexico the apple is the chief fruit crop. A dozen of the better known standard varieties flourish here and the yield in ordinary years is large, some thinning usually being necessary. The fruit may be sold on the trees if desired. The market, particularly for winter apples, is dependable.

Peaches, while not so dependable a crop as apples, because of the light spring frosts which sometimes catch the early blooming varieties, produce abundantly and a fruit which is unsurpassed in size, coloring and flavor. The Rio Grande Valley peach is in great demand.

Pears do splendidly. The trees are long lived, come into bearing quickly, and produce large crops of fine fruit. Apricots also grow finely in all parts of the valley. The small fruit grown by the Pueblo Indians is a delicious fruit and with the proper care which is now being given it by some growers is improving both in size and flavor. Plums do well, the crop from the so-called native trees being abundant and in demand for preserving.

Public Library, Albuquerque

Last, but by no means least

Fred Harvey Indian Building

in the list of important horticulture products is the grape. Around Bernalillo and in the vicinity of Belen and Los Lunas are large vineyards which produce bountifully and almost without record of a failure. Grape growing was introduced in this valley by the early Spanish Missionaries, the tasteful mission grape deriving its name from the mission fathers who first planted it. This grape is a splendid table variety and is very popular. The so-called California varieties also flourish although they are not extensively grown as yet. The culture is all on the stump system and the yield from old bearing plants is from 30 to 50 pounds to the plant. Six hundred or more vines may be planted to the acre. The grapes now grown are chiefly mid-season varieties and the shipping season is therefore short. With the introduction of earlier and later ripening varieties the season will be extended and the profits increased.

The growing of small fruits, strawberries, blackberries, etc., has not been undertaken on an extensive scale as yet, although all experiments thus far have proven successful.

Flower culture offers a profitable and pleasing field in this valley. Several successful hot houses and green houses are being conducted although these are not able to supply even the local demand for cut flowers and potted plants. The growing of roses and all the familiar garden flowers is easy and in Albuquerque many of the homes on the older residence streets are framed in luxuriant climbing roses and decorative vines and surrounded by handsome lawns and attractive flower gardens. By proper attention to seeding flowers may be had in the garden from the first days of spring until late in November.

The following figures give a few actual results which have been accomplished in the Central Rio Grande Valley from the field and truck garden. They are carefully compiled from statements by reliable farmers and gardeners and may be easily verified:

SOME ACTUAL RESULTS IN DOLLARS

Alfalfa—Average yield per acre per season, 6 tons. Cost of production per acre per season, $5. Average selling price, per ton, $13. Cost of baling, per ton, $1.50. Average net profit per acre per season, $54.00.

SUGAR BEETS—Average yield per acre, 20 tons. Average selling price, $4 per ton. Average cost of production per acre, $20. Net profit, per acre, $60.00.

CANTALOUPES—Average yield per acre, 300 crates. Average selling price per crate, $1.50. Average cost of production, per acre, $100. Net profit per acre, $350.00.

WATERMELONS—Average yield per acre, 40,000 pounds. Average selling price $1.00 per one hundred pounds. Cost of production $100 per acre. Net profit, per acre, $300.00.

TOMATOES.—Yield an average of 20,000 pounds of marketable tomatoes to the acre. Average selling price 5 cents per pound, for a six weeks season. Cost of production about $200 per acre. Average net profit per acre $800.00.

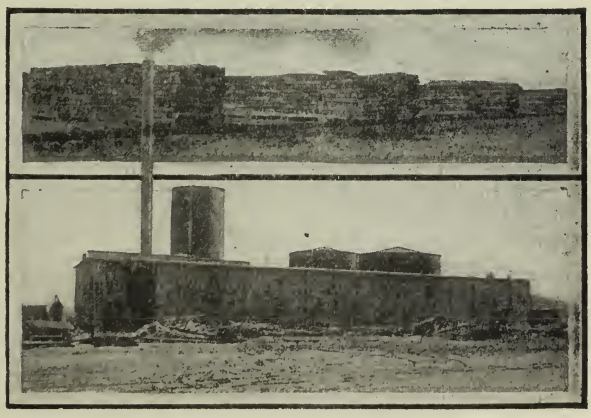
ASPARAGUS—From an acre and a half the Bleuher gardens at Albuquerque cut 30 dozen bunches of marketable asparagus per day. The average selling price is 50 cents per dozen bunches. The tract produces an average of 2,100 dozen bunches per season, or $1,050. The cost of production is about $150 per season. A net profit of $900 from the acre and a half. Several other smaller asparagus beds near Albuquerque produce proportionate results.

CELERY—The Bleuher gardens at Albuquerque plant 30,000 plants to the acre from which is produced a season average of 3,700 dozen bunches at 40 cents the dozen, or $1,480 per season. The cost of production averages $250 per acre per season. An average net profit of more than $1,200 per acre per season. Other less extensive planters are obtaining proportionate results.

ONIONS—Average yield per acre, 30,000 pounds. Average selling price, $2 per 100 pounds. Cost of production, average, $125 per acre. Net profit per acre, $475.00.

SWEET POTATOES. Average yield 400 bushels to the acre. Average selling price, $1.25 per bushel Cost of production, average, per acre, $75. Net profit per acre, $425.00.

CABBAGES —Average yield per acre per season, 30,000 pounds. Average selling price $1.50 per 100 pounds. Average cost of pro-



Santa Fe Tie Treating Plant at Albuquerque

duction, per acre, $100.00. Net profit per acre, per season, $350.00.

Cauliflower—Average yield per acre, 20,000 pounds. Average selling price per 100 pounds, $1.50. Cost of production, $100 per acre. Net profit per acre, $200.

Beans—Average yield per acre, per season, 5,000 pounds. Average selling price 5 cents per pound. Average cost of production per acre per season, $50. Net profit per acre per season, $200.

Turnips, Carrots and Parsnips—These produce an average of 30,000 pounds each to the acre. The average selling price ranges from $1.00 to $1.50 per 100 pounds. The average cost of production is $50.00 per acre and the average net profit from $200.00 to $250.00 per acre.

Mangoe Peppers—Average yield, 6,000 pounds per acre per season. Average selling price, per pound, 6 cents. Cost of production, average per acre, $100.00. Net profits per acre, $260.00.

Mexican Chile—Average yield per acre, dried (red chile) 4,000 pounds. Average selling price 10 cents per pound. Cost of production, $50.00 per acre. Net profit per acre, per season, $350.00.

It may be seen from the few averages given above that the Central Rio Grande Valley offers a wide lattitude in the selection of very profitable crops. These averages, except where noted, are not from the gardens of anyone especially prepared grower, but have been taken from the results given by a number of successful farmers and gardners who have given close attention and hard work to intensive cultivation of the land. Bearing apple and peach orchards in this valley will produce an average net profit, under careful tending, of from $650.00 to $900.00 per acre.

The figures given have been carefully averaged and may be easily confirmed.

DAIRYING AND POULTRY

Dairying and poultry growing are industries as yet only partially developed in this valley and offering a wide field for profitable labor and investment. The ten or twelve large dairies in the vicinity of Albuquerque are all money makers, yet Albuquerque ships in seventy-five per cent of the butter it consumes. Albuquerque also ships in from sixty to eighty-five per cent of its eggs and poultry. Several large poultry farms have already proven successful and the business offers special inducements.

IRRIGATION OUTSIDE THE RIO GRANDE VALLEY

Irrigation in the three counties described in this book is by no means confined to the Rio Grande Valley. There are a number of exceptionally practicable opportunities for private irrigation enterprises and several of these have already been taken advantage of by energetic men and corporations. The Rio Puerco, which

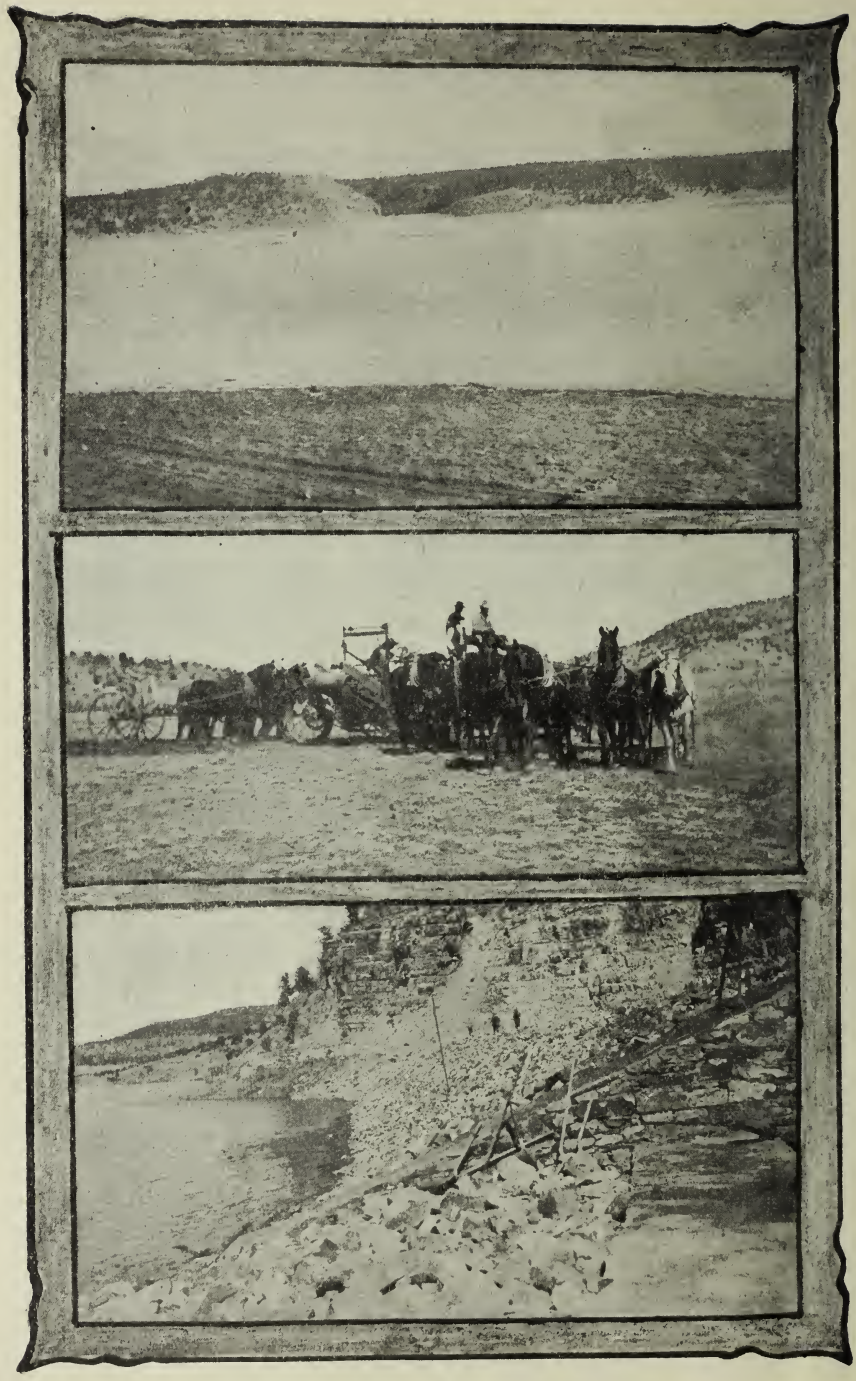
flows through western Bernalillo and through Valencia county, carries sufficient water to irrigate all the land along its course, a very large area. Thus far only a few small ditches have been taken out of this river, which will require capital to develop on account of the depth of the stream bed. Just now, however, an extensive colonization project is proposed on the Antonio Sedillo land grant, of 81,000 acres, which contemplates the building of a reservoir and an extensive canal system and which will transform this entire grant, lying along the river, into a fine farming district. The land, when watered will produce equally as fine crops as can be produced in the Rio Grande Valley.

At Bluewater, in northwest Valencia county, a great irrigation reservoir and canal system has been constructed by the Bluewater Development Com-

Scenes on the Bluewater Irrigation Project

pany with offices in Albuquerque, which will irrigate 30,000 acres in the Bluewater and San Mateo valleys. This land is also very fertile and will produce all the crops that can be grown in the Rio Grande Valley. This project is now complete and the near future will see the growth of a flourishing farming community there, since the lands are to be sold in small tracts to bona fide farmers, at very reasonable prices and on easy terms. This project transforms what was until recently only sheep range, into the best of farming lands.

In addition to these projects there are numerous small streams in the mountain districts where farming by irrigation is now being carried on and where there are splendid opportunities for development, with comparatively small outlay of capital. The Jamez river is a fair example. The storage of flood water, which at certain seasons pours down the mountain canyons and arroyas to go to waste, offers another opportunity for successful development of small tracts. On of the most attractive ranches in Bernalillo county is at the base of Sandia Mountains where an



The Bluewater Project, Western Valencia County

enterprising homesteader has built a dam across the outlet to one of the small canyons, thus storing sufficient water for the irrigation of his tract. All of the land in these three counties, in valleys or in mountain regions, will produce abundantly when water is applied. The so-called dry farming, or farming without irrigation has not been successfully attempted in this region, save in the higher altitudes. Over the rest of the region the rainfall on an annual average of forty years, is less than 10 inches, while for successful dry farming 15 inches or more is needed.

The numerous opportunities for irrigation by storage of flood water, or by pumping, now to be found, will within the next few years bring under cultivation a very large area outside the Rio Grande valley and will become an important factor in the productivity of the region.

PUBLIC LANDS OPEN TO ENTRY

Although not so great as in other sections of New Mexico there is a vast area of public land open to entry under the homestead and desert land laws in the three counties. These lands, however, are scattered, and careful personal investigation is necessary to find the desirable tracts. In connection with these open lands, the possibilities for development through storage of flood water and pumping are very important. There are many locations in each of the three counties where a water supply may be developed by one or the other means.

In all three counties the desirable lands along the water courses have long since been taken up, are held in private ownership, in private land grants or Indian land grants. The homesteader in this region must leave the beaten paths and strike out into the less developed sections, where, with industry and perseverance he is fairly sure to find a desirable home.

The acreage of public land open to entry in the three counties is approximately as follows:

	Acres.
Bernalillo county	200,000
Sandoval county	700,000
Valencia county	1,000,000

In Bernalillo county the chief public land area is in the extreme western part and on the broad mesa east of the Rio Grande. In Sandoval county the public land open to entry lies chiefly in the mountain districts of the central and northwestern portions. In Valencia county there is a vast area of public land in the western portion, although for forty miles north and forty miles south of the right-of-way, the Santa Fe railroad owns the odd numbered sections or alternate sections under the terms of the old government grant to the Atlantic and Pacific Railroad Company. This land, now chiefly valuable for grazing, is being prospected for artesian water and a strong artesian flow has been discovered at Suwanee, forty miles west of Albuquerque where one well has been brought in. Extensive drilling is now being done to develop the artesian area. In the event that the proven area is large, another great irrigated district will be added to the region, since the water has been found suitable for irrigation

Intersection of

Some

Avenue, Albuquerque

purposes. There has been a rush of land hunters to the district and practically all vacant public land in the immediate vicinity of the well has been filed upon. The railroad, however, in the event of development of an extensive artesian water supply, will probably put its vast holdings on the market at low prices.

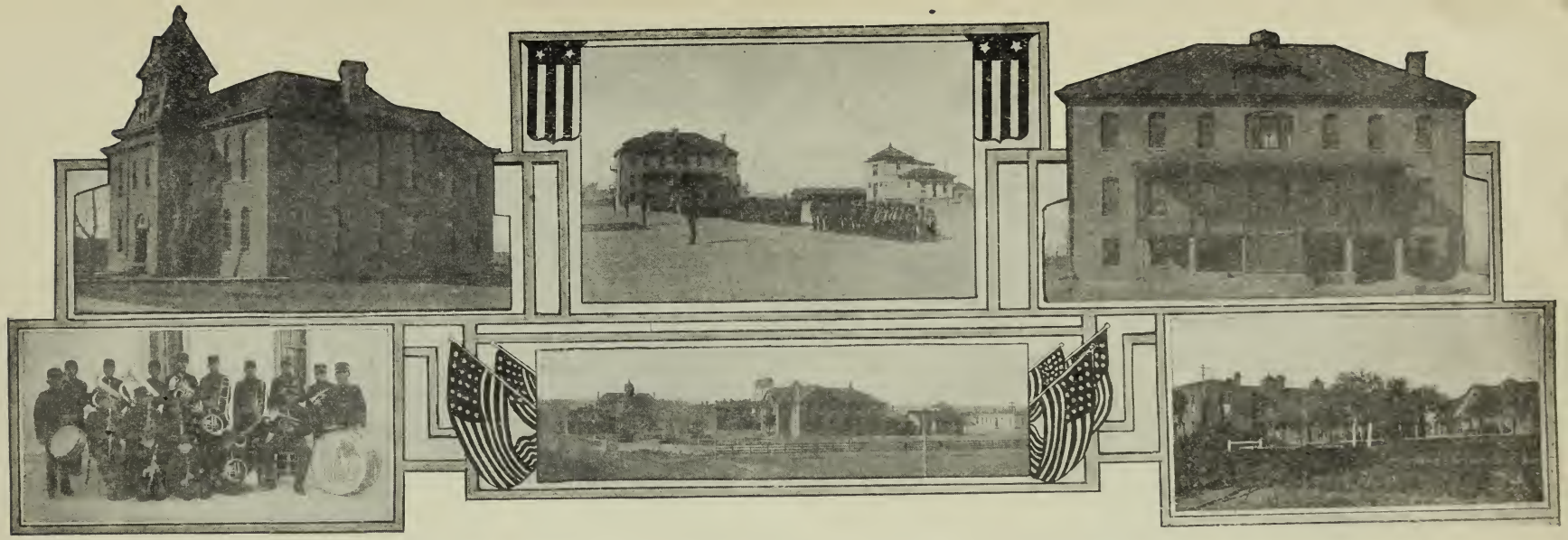
Some idea of the vast area of the three counties described herein is had from the fact that they constitute about one-twelfth of the whole area of New Mexico. New Mexico's total area is 122,000 square miles. The total area of these three counties is 10,785 square miles. The area is divided as follows:

County.	Sq. Miles.	Acres.
Bernalillo	1,240	793,600
Sandoval	3,833	2,453,120
Valencia	5,712	3,655,680
Total	10,785	6,902,400

Of this area of approximately 7,000,000 acres, 1,900,000 acres are open to entry under the United States land laws; 541,456 are within Pueblo Indian land grants; 1,623,172.97 are within the Spanish or Mexican land grants, which have been confirmed by the United States court of private land claims (Grants made by the Spanish or Mexican governments, prior to the American Occupation, and since confirmed by Congress). The remainder, approximately 3,000,000 acres, is held in private ownership, within the Santa Fe railroad grants, and within three national forests, the Jemez, in Northeast Sandoval county, the Manzano No. 1, in Eastern Bernalillo and Valencia and the Manzano No. 2, or Mt. Taylor in Northern Valencia.

INDIAN LANDS AND PRIVATE LAND GRANTS

As has been said, of the more than half a million acres of land in the three counties now held in Pueblo Indian grants, much of the agricultural land will eventually be opened to cultivation by American farmers. For the present, however, the land can neither be sold nor leased and lies idle, save for the small portion cultivated or used as pasture by the Indians. More than a million and a half of acres in the three counties are within private land grants and much of this land also lies in the Rio Grande valley. At one time these grants were a serious obstacle to the development of the country. Many of them, however, have now been partitioned, or are in course of partition by the courts; several have been purchased outright by individuals or corporations who are selling them off in small tracts, as in the case of the Antonio Sedillo grant on the Rio Puerco, or holding them for an advance in land values. Since their confirmation by the United States court of private land claims, absolutely clear title to all of these grants can be given, and they are rapidly breaking up, being now rather a stimulant toward than an influence against rapid development. The history of these land grants is of intense interest and could be made to fill several large volumes. Some



Scenes at the United States Indian School, Albuquerque

of them on partition have been found to have hundreds of owners, one or two having had more than two thousand claimants, heirs of the original grantees. Some of them contain valuable farming land, others, as in the case of those in the mountain regions, contain fine tracts of timber, while others are valuable for grazing. These grants will play an important part in the immediate future development of this region.

The following table shows the list of confirmed grants within the three counties. Those marked XX have been partitioned, or in other words, are in condition for sale with reliable title; those marked R are wholly or in part within the Rio Grande valley; those marked P are wholly or in part in the Rio Puerco valley. Those marked M are in the mountain regions:

BERNALILLO COUNTY

Grant.	Acres.
Town of Chilili	27,800.00M
Canon de Carnue	2,000.59M
Canada de los Apaches	40,000.00M
Canada de los Alamos	200.00M
Town of Atrisco	82,728.72R
Town of Albuquerque	12,110.00R
Elena Gallegos	35,084.78R
Pajarito	28,724.22R
El Ranchito	4,945.24R
San Pedro	10,000.00M
Town of Alameda	25,600.00R
Antonio Sedillo (part)	1,800.00P.XX
Lo de Padilla	2,500.00R
Bernabe M. Montano	14,070.66P
Total 14 grants	287,564.21

SANDOVAL COUNTY

Grant.	Acres
Town of Tejon	12,801.46M.XX
Baca Location No. 1	99,289.39M.XX
Ojo del Espiritu Santo	113,141.15M.XX
Town of San Ysidro	11,476.68M.XX
Canon de San Diego	116,286.89M.XX
San Antonio de los Uertas	4,763.85M
Canada de Cochiti	19,112.78M.XX
San Fernando and San Blas	44,070.66M
Ojo de Borrego	16,079.80R
Pena Blanca	585.66R
Town of Alameda	63,746.00R
Town of Bernalillo	3,404.67R
Angostura	1,579.48M
Ignacio Chaves	23,629.30XX.M
S. and S. Montoya	2,967.57M.XX
Nuestra Senora de la Luz	47,196.49M.XX
Agua Salada	10,693.98M.XX
Ojo de San Jose	4,336.91M.XX
Santa Rosa de Cubero	1,945.50M.R
Pedro Sanchez	16,300.00M
San Pedro	13,914.76M
Cebolleta	28,000.00M.XX
Caja de Rio	25,000.00R.XX
Canada de los Alamos	200.00M.XX
La Majada	32,404.10M.XX
Barnebe M. Montano	30,000.00P.XX
Total 26 grants	742,917.08

VALENCIA COUNTY

Grant.	Acres.
San Clemente	37,099.29M
Town of Cubero	16,490.94M
Casa Colorado	59,000.00R
Town of Tome	121,594.53R
Town of Belen	73,000.00R
Town of Cebolleta	123,567.92M.XX
Canada de los Apaches	46,249.09M
San Mateo Springs	1,750.00M.XX
Antonio Sedillo	18,254.14P.XX
Lo de Padilla	49,440.82R
Nicolas Duran de Chaves	46,244.94R
Total 11 grants	592,691.68

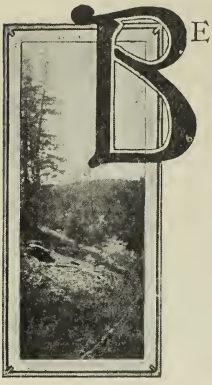
Following is a list of the Pueblo Indian land grants and reservations within the three counties. Those marked R lie wholly or in part in the Rio Grande valley:

Pueblo.	Area.	County.
Jemez	17,510	Sandoval
Acoma	95,792	Valencia
San Felipe	34,767.R	Sandoval
Cochiti	24,276	Sandoval
Santo Domingo	74,743.R	Sandoval
Sia	17,515	Sandoval
Sandia	24,187.R	Sandoval
Isleta	110,080.R	Bernalillo
Laguna	125,225	Valencia
Santa Ana	17,361	Sandoval
Total area	541,456	

St. Joseph's Sanitarium, Albuquerque

Bernalillo County, Its History and Population

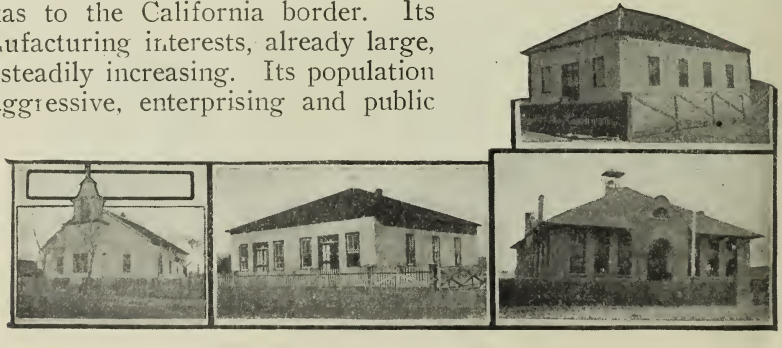
With a Brief Sketch of the City of Albuquerque



BERNALILLO COUNTY in area is the smallest, and in assessed valuation the richest county in New Mexico. Its high property valuation results from the rapidly advancing values of Albuquerque real estate and the rich farming lands surrounding. The county was one of the original divisions when New Mexico was created into a territory, extending from Texas to the western boundary. It has frequently yielded portions of its territory for the creation of new counties and the newer counties of McKinley, Torrance and Sandoval were created largely from its area. The location of the county may be readily traced upon the accompanying outline map of the region. Population has increased rapidly within the past five years and is now estimated at between 30,000 and 35,000, of which 25,000 live within a radius of five miles of the center of the city of Albuquerque.

The county seat is the historic village of Old Albuquerque, named for the Duke of Albuquerque, and one of the first settlements established by the Spaniards in the Rio Grande valley, the Church of San Felipe de Neri, part of the original construction of which is preserved, dating from 1778. While not included in the city limits, the old village is now to all intents a part of the vigorous young city which has grown up to overshadow it, the county court house in the old town being but ten minutes by street car from the business center of Albuquerque.

ALBUQUERQUE Albuquerque is the central trade mart not only of the Central Rio Grande valley, but of all New Mexico. Occupying, as it does, a commanding position in almost the geographical center of the territory, with direct rail connection with all sections, it is recognized as the chief distributing market between Denver and Los Angeles. Its rapidly growing wholesale interests cover all staple and many special lines and reach out over a trade territory from Colorado to Mexico and from East Texas to the California border. Its manufacturing interests, already large, are steadily increasing. Its population is aggressive, enterprising and public



A Group of Typical District Schools, Bernalillo County

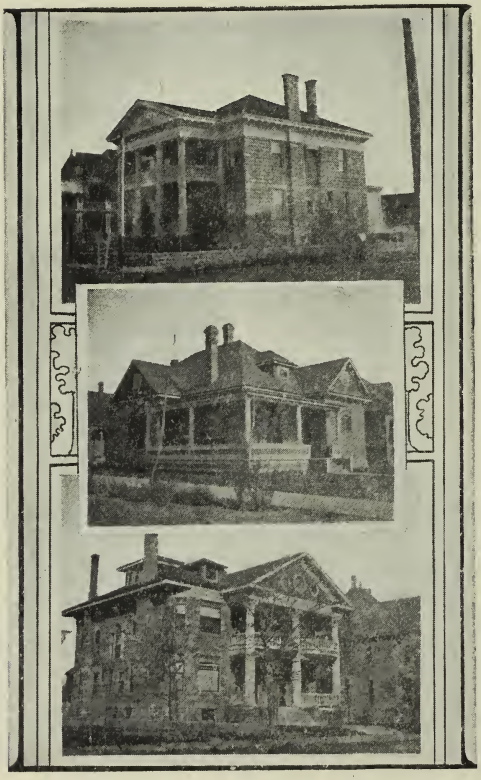
spirited and the city is advancing with surprising rapidity both in wealth, extent and importance of its business interests and in population. The recent completion of the Santa Fe's new transcontinental line from Belen to Texico on the Texas border has opened to Albuquerque the most rapidly advancing section of Eastern New Mexico; while since the founding of the city its trade relations with the districts north, south and west have been close. The population now within the city limits does not exceed 15,000; but within a radius of five miles of the center of the city lives a population of not less than 25,000. So rapidly is this population increasing that the census of 1910 will show not less than 30,000 people within this area. Its location has made Albuquerque the "Chief City of a New Empire in the Great Southwest". and that same location and the enterprise and hustle of its people will keep it so.

Albuquerque is the central market for the Rio Grande valley and the rapidly developing farming interests of this region alone, would suffice to build up a city. It is the central wool and live stock market of New Mexico. Approximately 7,000,000 pounds of wool are scoured each year at the Albuquerque mills and as much more handled by merchants and commission men from Albuquerque, while hundreds of thousands of sheep and lambs pass through the Albuquerque stock yards with each shipping season. It is the central lumber manufacturing point in the Southwest, the huge mills of the American Lumber Company employing 2,000 men in mills and forests and having a capacity per day of 350,000 feet of sawed lumber, turning out also 100,000 feet of mouldings, 100,000 feet of box shook, 1,500 doors, 2,000 windows, 60,000 shingles and 70,000 laths. Woolen mills with capacity to handle a large portion of New Mexico's great wool crop are located at Albuquerque, as are flouring mills, artificial stone, brick, tile and cement manufacturing plants, iron works, the principal machine and repair and car shops of the coast line system of the Santa Fe railroad, the Santa Fe's enormous tie and timber treating plant, and numerous

Bernalillo County Court House

smaller manufacturing plants which swell the city's total annual payroll from this source to surprising figures. There are four strong banks with combined resources of six million dollars, thirty wholesale establishments, many of them housed in handsome buildings and a strong retail community, with modern, attractive stores and markets. In a word, Albuquerque is a vigorous , growing southwestern city, proud of its record, certain of its future; a future that holds out so much of promise that Albuquerque real estate climbs steadily higher, without inflation of values, but with a steady advance based upon firmly established conditions.

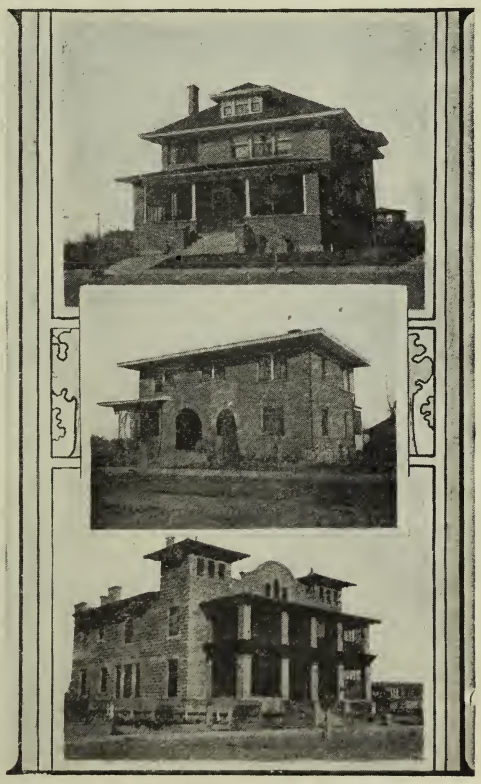
The city has much of public spirit and civic pride. Its local government is clean and economical, its police regulations good, its social conditions excellent. There are forty miles of graded streets upon the improvement of which thousands of dollars are now being expended, while paving contracts are to be let at once for the retail business district. Engineers are now drawing the plans for a complete new sewer system, adequate for a city of 75,000 and capable of extension at will. There are miles of residence streets, lined with handsome homes, shaded by mighty trees that on many streets form archways for block after block, with twenty-five miles of cement sidewalks. The Albuquerque Commercial Club occupies a $100,000 three story brown stone club building, and has a membership of 350. Plans are now approved for a new city hall. The government has under construction a federal building at a cost of $130,000, for the use of the post office, United States court for the second district of New Mexico, United States marshal for New Mexico and other federal officials who have headquarters in the city. The Albuquerque post office with receipts for the fiscal year ending June 30, 1908, of $44,000 is now a first class office, the receipts having doubled since 1901 and showing a 15 per cent increase over the previous year. The citizens, aided by an appropriation from the territory have completed a $25,000 armory and convention



Albuquerque Homes

hall with seating capacity for 4,000, built especially to accommodate the Sixteenth National Irrigation Congress, September 29, 1908, but so constructed as to stand as a permanent convention hall for years to come. The city has a handsome three story public library building, a fine park system, now being extended and improved, a $75,000 theater, Masonic temple, Woman's club, while all of the larger fraternal societies are housed in commodious lodge rooms or halls. There are fine hotels, including the picturesque Alvarado, built by the Santa Fe railroad for Harvey management, at a cost of $200,000. The city has a well equipped fire department, with two stations and a force of fifteen firemen and the public utilities, water, gas, electric light and power and trolley car system are thoroughly adequate. The city has long distance telephone connection with the entire Southwest and the local exchange is housed in a $40,000 modern exchange building. There are ten passenger trains daily, north, east, south and west, over the Santa Fe's several lines while a second railroad is under construction.

Albuquerque is well fitted for the care of the constantly increasing army of invalids and sufferers from consumption who now find their way to new Mexico each year. The Santa Fe's general hospital for the coast lines and St. Joseph's sanitarium, a fine institution built at a cost of $100,000, are the larger hospitals now in operation, while the great southwestern sanitarium for tuberculosis, being built by the Presbyterian church has been located at Albuquerque and is under construction. There are several well equipped private sanitaria and health resorts.



Albuquerque Homes

The city has fifteen churches and a Jewish congregation, occupying their own buildings, several of them being new buildings of attractive architecture, while the Immaculate Conception Catholic parish has completed plans, with funds available, for a handsome new church.

The city is justly proud of its educational facilities. The University of New Mexico, supported by the territory, occupies a magnificent site on the edge of the mesa overlook-

Convention Hall at Albuquerque

ing the city, occupying modern buildings and equipped for thoroughly effective work. It is a strong, well managed institution rapidly taking its place as one of the able higher educational institutions of the West. The city's public school system is splendid. It occupies five large two story, modern buildings, while a sixth will be constructed within a short time to meet the demands of the enrollment, now about 1,800. Fifty teachers are employed at salaries ranging from $60 to $125 per month. There are special instructors in art and music and a manual training department is the next extension determined upon. Many farmers in the Rio Grande valley place their children in the Albuquerque public schools and it is possible for the pupil to go from the grammar school through the full university course without leaving home and at practically no expense.

In addition to the public school system there are a number of fine private schools including St. Vincent's academy for young women, the Immaculate Conception school for boys and girls, a business college, the Menaul Mission school, under direction of the Presbyterian church, the Harwood home for girls and the Harwood school for boys, under direction of the Methodist Episcopal church, and a United States Indian school representing an expenditure by the government of $250,000, and one of the principal schools in the government system. Brief as this sketch has been, it is easy to recognize the value of Albuquerque as a market, its substantial trade position and its usefulness to the man who purposes to place on the market the products of land in the Central Rio Grande valley. The farmer has immediately accessible a satisfactory consuming and distributing market; a progressive, fully equipped growing community with whose future his own will be quite safe.

There are no important settlements in Bernalillo county outside of Albuquerque and its suburbs. A few small villages up and down the river and a few settlements in the mountains making up the list of post offices.

Telephone Exchange

Water Works Plant

Sandoval County, Its History, Population and Settlements

SANDOVAL COUNTY is one of the newer divisions of the territory. It was created by the legislature of 1903 chiefly from Bernalillo county. Much of that portion of the county lying outside the Rio Grande valley is without railroad communication and has not yet begun to develop as it will undoubtedly develop when it's vast natural resources of mine and forest and range become more widely known. The population of the county is about 12,000, living chiefly along the Rio Grande and in the Jemez mountain region. Bernalillo, the county seat, is on the Santa Fe railroad and the Rio Grande, 18 miles north of Albuquerque and is one of the oldest towns in New Mexico. It has several large mercantile establishments, a large flouring mill and is surrounded by a very fertile farming district, making it an important shipping point, while it is the railroad station for the famous Jemez mineral springs and for the stage lines which traverse the county to the north and northwest.

Domingo, on the Santa Fe, north of Bernalillo is the shipping point for one of the large lumber manufacturing companies of the region while at Hagan, east of Bernalillo are the most important coal mines in Central New Mexico to which a railroad is now building. Other important settlements are at Jemez, the post office for the Jemez hot springs and the important grazing and timber country surrounding. Cabezon and Cuba are in the sheep growing district. These postoffices are reached by stage from Bernalillo.

Looking Across the Jemez Valley, Sandoval County

Valencia County, an Inland Empire

WITH its great area and vast natural resources, Valencia county is one of the most important in New Mexico. Its farming, mining, lumbering and stock growing interests, already large, open tremendous possibilities of development. The county was one of the original divisions on creation of the territory, and has suffered little from the creation of new divisions. Its present population is about 16,000, but the growing town of Belen and important development enterprises along the Rio Grande and in the western sections of the county will double this population within the next five years. Los Lunas, the county seat, is one of the oldest settlements of the whole valley. A fine court house is located there, a large flouring mill and several large mercantile establishments which do an extensive business with the rich farming region surrounding.

An Indian Truck Gardner Bluewater Valley

Belen, the largest town in the county, is rapidly taking its place as one of the most important towns in New Mexico. As the junction point of the Santa Fe's north and south and east and west lines across the territroy, it has assumed importance as a railroad center and is enjoying rapid and substantial growth as a result. One of the largest mercantile establishments in New Mexico, the John Becker Company, makes its headquarters at Belen, while the largest flouring mill in the territory is located there. It is the shipping point for the southern portion of the Central valley and has tributary to it one of the most productive regions in New Mexico.

Church and Chapel at Belen

Belen Roller Mills

Main Canal, Bluewater Project

The population of Belen is now about 2,000 having doubled in two years. The town maintains a prosperous commercial club, occupying its own building, has adequate banking facilities and an excellent public school system. The New Mexico Home for Orphans is located there, also the Felipe Chaves School for Girls. The town is well located, laid out on modern plans, and with its energetic, progressive population and splendid railroad facilities is destined to become one of the most important towns in the Rio Grande valley. Peralta, in the Rio Grande valley, and Laguna on the Santa Fe in the northwestern portion of the county, each has a flouring mill and prosperous mercantile houses, while other important settlements are Bibo, Bluewater, Casa Blanca, Copperton, Cubero, Grants, Kettner in the lumber region, Jarales, San Mateo, Seama, Seboyeta and Tome.

All towns in the Central Rio Grande valley are connected by long distance telephone and many farmers now have rural telephone service.

Looking Across the Bluewater Valley

The John Becker Store, Belen

The Livestock Industry, Sheep, Wool, Cattle and Stock Feeding

COMING next to agriculture, the live stock industry is most important in this region. The vast reaches of public domain in Northern and Western Sandoval county and Western Valencia county afford an ideal range for sheep, the mild winters making shelter unnecessary, save in the higher mountain regions where the herds never go save for the summer pasture. Hundreds of thousands of sheep are now grazing in this region and the high prices paid for wool and the even higher prices paid for lambs during the past few years have placed the industry upon a very substantial basis. The public domain, however ,is now supporting about all it will stand, according to grazing experts, the allotments for grazing on forest reserves are full and unless he is in a position to control a home ranch with abundant water rights, there is not a great deal of inducement to the newcomer to embark in the industry, unless he buys out some established grower. This, so long as the present large profits continue, is not a common opportunity. The industry, however, is being extended. The tendency is to improve the herds and reduce the number, thus keeping up the weight of the fleece and the lamb while reducing the burden on the range.

SHEEP FEEDING

While there is not much inducement for embarking in sheep growing on the range, unless under the conditions outlined above, there is a very favorable opening for another branch of the industry in sheep feeding for market. Alfalfa makes an ideal food, while the introduction of sugar beets adds another important food product. Hundreds of thousands of lambs are shipped out of New Mexico every years to feed lots in Colorado, Kansas and further east where the feeders make large profits on the Kansas City and Chicago markets. Men who have studied the industry assert that these lambs could be fed to weight and placed on the market as economically from the Central Rio Grande valley as from the feed lots further north and east. Indeed, it is asserted that lambs fed in this valley would go into condition earlier, and at less cost, avoiding the double shipment and having the advantage of a milder climate during the feeding season. The Colorado feeder usually has to buy his feed. The Central Rio Grande feeder could easily grow his own feed. Successful experiments have already been made in this industry and it is certain of immediate extension.

The same conditions are true as to hogs, although comparatively few are grown in this valley. Three-fourths of the hogs killed at local packing houses are shipped in from the East.

Sheep Scene in the Central Valley

Owing to the large profits from sheep, cattle growing has received comparatively little attention in this region. The country, generally speaking, is better adapted to sheep than to cattle and the latter industry, with the steady restriction of the range, will never be extensively followed. Large herds of native goats are grown in the region. The winter climate of the mountains has been found too severe for successful growing of Angoras.

THE MINING INDUSTRY

THE mining industry in the three counties has received surprisingly little attention when it is recalled that there are vast areas in the mountain districts where prospecting and surface indications point to large and very rich ore bodies. Lack of transportation has had much to do with retarding this industry. With cheap transportation this region will become one of the most important mining districts of the West. In one or two districts high values have been proven, while others are now receiving attention from investors who are proceeding with development upon an extensive scale.

Most important among the districts where values have been established is that around Bland in the Cochiti mountains of Sandoval county. Bitter and extended litigation has done more than any other cause to retard this district which has already produced hundreds of thousands of dollars in high grade ore. The Albemarle group with a main shaft 700 feet deep, has produced $667,500 in gold and silver, while the Lone Star, Washington, Crown Point and half a dozen other properties have been heavy producers.

The Nacimiento district, in the northern extension of the Jemez

range, Sandoval county, has shown high values in copper and a large reduction plant has been constructed there. The district also carries extensive coal deposits. The Placitas district on the northern slope of the Sandia range has been extensively prospected and several good properties located. Vast deposits of almost pure marketable sulphur are found in the vicinity of the Jemez and Sulphur Springs in the Jemez mountains, here a small sulphur refinery has been established.

At Hagan, Sandoval county, are the most important coal deposits in Central New Mexico. This is a good steam, coking and domestic coal and will soon be on the market, a branch of the New Mexico Central railroad being under construction to the mines, while another branch, under construction to Albuquerque will give the whole central valley a cheap fuel supply. Coal is encountered along the Rio Puerco in Valencia county and in Western Bernalillo, while large deposits have been marked out by surface indications in Western Valencia county. Enough prospecting has been done to insure for Sandoval county a future as one of the great mineral producing counties of New Mexico, and to a lesser extent development has established high values in Bernalillo county, the chief districts being in the canyons of the Manzano and Sandia ranges east of Albuquerque where in Tijeras, Coyote, and Hell conyons placer gold has been found, while thick veins of high grade lead ore are now being developed with every indication of large and profitable production.

Valencia county, while rich in minerals, is thus far the least developed portion of the region. Gold, silver, copper, and iron ores are known to exist in large bodies, while sulphur, lithographic stone, gypsum, fire clay, pumice stone, ochre, cement, salt and coal are found in almost limitless quantities. The county is a veritable storehouse, waiting only for capital and transportation to open its doors. The whole region is one offering alluring invitation to the prospector and investor.

THE LUMBER INDUSTRY

THE lumber industry is the growth of the past few years, dating from the purchase of the Mitchell tract of 300,000 acres of white pine timber in Western Valencia county by the American Lumber Company, manufacturing the product at Albuquerque. In addition to this tract, which it holds in fee, the company has acquired the right to cut timber on a considerable extent of adjoining land lying chiefly in the Zuni mountains and it has standing timber sufficient to keep its Albuquerque mills running at present capacity, for thirty years. Seevral smaller mills are in operation in this region and the industry has become one of the most important in New Mexico.

In the Jemez mountains of Sandoval county stands a vast area of the finest timber in the West. Much of it is within the Jemez national forest. Timber marked for cutting, however may be obtained and several large contracts have already been made, a large saw mill having been estab-

lished near Domingo, by the Domingo Lumber Company with offices in Albuquerque. Large tracts of saw timber in the Jemez region are also held in land grants and private ownership, most of these tracts being held for higher prices. They will furnish the timber supply of the region for the future. The Rio Grande Tie and Timber Company is another corporation operating to some extent in Sandoval county, although its timber lands lie chiefly in Rio Arriba county to the north. The logs and hewn ties are driven down the Rio Grande at flood time to Domingo, the shipping point. The first big drive was made during the flood season of 1908.

Typical Forest Scenes in Pine Forests of Jemez Mountains

The Climate of the Central Rio Grande Valley

In Its Relation to the Treatment of Tuberculosis and Diseases of the Throat and Lungs

By JAMES H. WROTH, M. D.

THROUGH the many years while the United States had troops stationed throughout New Mexico it was discovered that the Rio Grande valley presented an unusual protection against tubercular troubles. Long before the time of scientific investigation as to cause and effect these facts were brought to the attention of the army surgeons of the various posts and Central New Mexico was regarded as the favored spot to which tubercular troubles should be sent with the highest probability of permanent relief. All this was recognized before the causation of tuberculosis had been diagnosed by the microscope. The works of Bartholw, Bertelette and Smart had conclusively proven that there was something in the Rio Grande valley which exercised an inhibitory or restraining effect upon the cause of tuberculosis and these facts were recognized long before any satisfactory explanation of their existence could be given.

It is now uniformly conceded that sunlight and dryness are at least potent factors, if not the main factors, in the curative process against the White Scourge, which attracts so much attention at present. Coincident with the discovery of the cause of tuberculosis (the bacillus) the United States government caused to be issued a resume of the weather observations made at the various posts of the United States army in New Mexico. These posts have long since been abandoned, but fortunately for the medical profession and the world at large, the observations have been kept up by voluntary disinterested observers, until we have, all over the territory observations ranging over a sufficient term of years to make them of practical value. The compilation of thirty-five years of observation proves that the ten-inch rainfall belt coming westward through Texas, extends a long, narrow prolongation north, within the Rio Grande valley as far as Embudo, New Mexico. This prolongation is nowhere more than twenty-five miles wide and is confined absolutely between the mountain ranges bordering the Rio Grande on the east and west.

Within the finger-like projection there exists an isolated "island" of dryness extending from Bernalillo on the north to Sabinal on the south, of which "island" Albuquerque is the geographical center. This "island" is 25 to 50 per cent drier than any other part of the ten-inch rainfall belt.

Here we have the scientific solution of the facts recognized long ago, that Central New Mexico is better prepared, better equipped by nature to provide for the care and treatment of tuberculosis than any other part of

New Mexico, even though all other sections of this territory are recognized as far better than eastern and northern locations.

Whether Providence in its wisdom selected this particular section, or whether geological formations have been such as to cause it, the fact remains that through the counties of Sandoval, Bernalillo and Valencia in the center of the Rio Grande valley there exists a section of the country which presents the minimum of rainfall and the maximum of sunshine as compared with the entire United States.

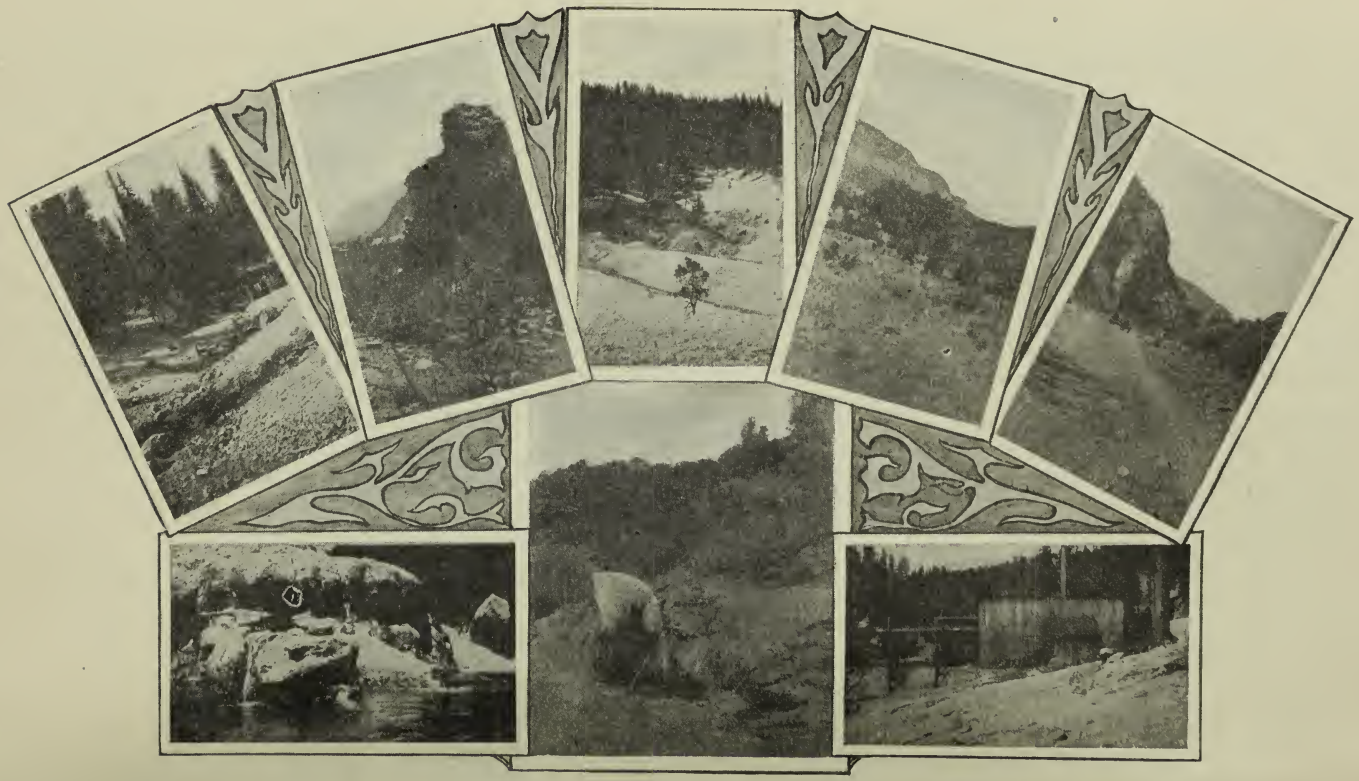
Sanitarians may speculate as they please as to why this occurs. Records are the facts upon which opinions are based and when the records and the results of residence coincide, there is formed a combination hard to beat and one which cannot be controverted.

No attention has been given in this article to the number of people benefited, cured or relieved. This can be easily proven by United States army records and by the general experience of competent physicians who have not only traveled but lived in this section.

In conclusion, the special benefit attached to the three counties that contain the Central Rio Grande valley, is to be found in climatic conditions, the maximum percentage of sunshine and minimum of rainfall, proven by over forty years of observation. Here is a narrow area of dryness and sunlight, forty miles long and not over five miles wide, of which Albuquerque is the center, presenting absolutely ideal conditions for the successful arresting of tuberculosis. It behooves us to utilize this great natural sanitarium for the benefit of those afflicted with the White Scourge.

HOT AND MINERAL SPRINGS— HEALTH RESORTS

In addition to the large and thoroughly equipped sanitaria in Albuquerque, comfortable accommodations for healthseekers are found in the mountain resorts at Whitcomb Springs, Tijeras Canyon in the Sandia mountains and at the famous Jemez hot springs in the Jemez mountains of Sandoval county. These latter springs are, in medicinal and curative properties of the water, in location and magnificance of surrounding scenery, the most important in New Mexico. Eventually they will become as famous as are the most highly valued medicinal springs of Europe. The springs are reached at present by stage from Bernalillo. Roomy and well kept hotels have been constructed, together with fairly well equipped bath houses and the springs are becoming more popular each year with pleasure seekers and healthseekers. The springs are in two groups, known as the Jemez and the Sulphurs, or the upper and lower springs. The lower group of ten springs gives variations in temperature of from 94 to 168 degrees Fahrenheit. The latter temperature is the highest of the several groups of hot springs found in New Mexico. The springs are at an average altitude of 6,620 feet. The water of the largest and hottest spring flows about fifty gallons a minute with escaping carbonic acid gas and depositing white carbonate of lime. One spring



Scenes in the Jemez Region—Showing the Famous Sulphur Dyke; Sulphur Mill and the Springs—in Sulphur Canyon

Valle Grande, the Crown of the Jemez Range, Sandoval County

with temperature of 103 degrees Fahrenheit, carries free carbonic acid gas and its deposit is a reddish brown, while a third spring, temperature 119 degrees Fahrenheit, is impregnated with sulphurated hydrogen and iron. The other springs carry sodium, lime and magnesium. The solid constituents are about .24 per one one hundred parts of water.

The upper group, or Sulphur springs ,are two miles above the lower group at an altitude of 6,740 feet, temperature varying from 70 to 105 degrees Fahrenheit. They flow from crevasses in the center of Sulphur Canyon. The waters are strongly impregnated with sulphur and resemble strongly those of Marienbad. The springs are both mud and vapor and their principal constituents are chloride of sodium, sulphate and carbonate of soda, lime and magnesium. They are especially effective in rheumatism and blood disorders. The solid constituents are .3726 to each one hundred parts of water.

Commercially, the Coyote springs, in Coyote canyon, fourteen miles southeast of Albuquerque, are the most important in the region, the waters being sold, charged and uncharged, in large quantities.

There are several important mineral springs in Valencia county, which, because of their inaccessibility have not yet received much attention. They will become important with the developement of the region.

In the mild and equable climate of the Central valley, the healthseeker, if he be not bed-ridden, can find comfort and the most healthful environment in the so-called tent-house. The popular pattern is a board floor, walls of rough boards half way up, the remainder of walls and roof being of canvas, with a wide space between the top of the walls and the roof, to allow free circulation of air. There are hundreds of these tent houses

around the suburbs of Albuquerque, many of them of three or more rooms, fitted with electric lights and water and as comfortable in every way as the average small cottage. The accommodations for healthseekers are being constantly enlarged and improved and while no especial effort is made to induce the sick to come to this region, the unequaled climate is the magnet which draws each year a constantly increasing number of those who need its beneficial influence.

A considerable portion of the happy, prosperous population of this valley is made up of former invalids, men and women who have come in time.

The Central Rio Grande valley and its adjacent territory offers special attractions to the tourist. Not only are its ancient adobe settlements of interest, but the Indian pueblos dotted along the Rio Grande from Santo Domingo to the typical Isleta village are well worthy of a visit and careful study. The Jemez pueblo in Sandoval county, with its ancient church and mission, the Laguna village in Valencia county, with its nearby pueblo of Acoma and the Enchanted Mesa, are points to which tourists are flocking every year in steadily increasing numbers. The larger portion of the proposed Pajarito national park, with its wonderful cliff dwellings, lies in Northern Sandoval county. The village Indians are a peaceful, unobtrusive people, busying themselves with their farms and orchards, flocks and herds and with the pottery making from which they derive a considerable portion of their meager income.

THE INDIAN VILLAGES

Jemez Canyon, Jemez Hot Springs in Distance

DISTRICT SCHOOLS Much of the area of the three counties is thinly settled, particularly in Northern Sandoval and Western Valencia counties. District schools, however, are maintained in every district, employing capable teachers and having from five to nine months of school each year. These schools are thoroughly well conducted being part of the modern educational system of New Mexico, which now compares favorably with the school system of any state in the West.

CONCLUSION In conclusion, it should be said that the exceptional opportunities for the farmer, the homeseeker, the prospector and investor now found in this favored region, are not likely to go on for long. The Central Rio Grande valley and its adjacent region is enjoying its full portion of the splendid period of development which, during the past few years, has been pushing all New Mexico to the front. Immigration is large. Capital, individual and corporate is busily investigating the opportunities of farm, mine and forest, while the demand for land in the Rio Grande valley has doubled within the past year. Under the present stimulus, prices are sure to advance and they may justly be advanced when the rapidly rising prices for irrigated lands in other less favored districts are recalled. The time to investigate is now.

Here is a region ideal in its location as to market, ideal in its conditions as to climate, soil and water supply, having adjacent a vast region of mountain and plain certain of speedy development. That development has already set in. The men who are here within the next few years will be prepared to take advantage of the benefits of its flood tide. A hearty welcome awaits the farmer, the homeseeker, the prospector and investor from the people who have already found happy homes here. The surest way to be convinced of the advantages offered by the Central Rio Grande valley, is to come and see them.

This book is published by authority of the Bureau of Immigration of New Mexico, an official body, the members of which are appointed by the Governor every two years and confirmed by the upper house of the legislature. Its duties are to encourage immigration, to furnish information to homeseekers and to use its best efforts to encourage development along all legitimate lines. The board as now constituted is: President, Joseph W. Bible, Silver City; Vice-President, C. E. Mason, Roswell; Treasurer, J. A. Haley, Carrizozo; D. A. Macpherson, Albuquerque; A. M. Edwards, Farmington; G. A. Fleming, East Las Vegas. Requests for information as to the region described in this book, or as to any section of New Mexico will receive prompt attention when addressed to the New Mexico Bureau of Immigration, Albuquerque, New Mexico.

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